

# ***ENERGY POVERTY IN DEVELOPED COUNTRIES: EUROPEAN LESSONS FOR US, US LESSONS FOR EUROPE?***

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## **Overview**

This paper describes the impact on the poor of volatile and rising energy prices worldwide and the Massachusetts Model to combat poverty through energy policy that helps meet the home energy needs (heating and electricity) of low-income households. We compare the Massachusetts Model to similar efforts in other developed economies:

- Other US states,
- Western Europe, and
- Eastern Europe.

We observe fundamental similarities in the approach to low-income home energy needs, but wide variation in the scale and scope of programs across the US as well as across Europe. This paper is a high-level effort to describe and explain the similarities and variations and to suggest some lessons that might be learned therefrom. We discuss issues of federalism, the role of past and current political consensus on underlying values, how income levels and income gaps affect what is practical to achieve, the role of climate policy in addressing low-income needs and of narrow economics in addressing climate challenges, and some means for developing appropriate programs in specific places.

## **Methods**

The authors have been active in the design, development, and implementation of the Massachusetts Model and describe the Model and its context based on that experience. The authors have also worked in other US states and will compare Massachusetts with other states in the context of the US federal system. Thus it should be recognized that our view is necessarily from a US frame of reference, as well as from a practical on-the-ground perspective.

We compare the experience in Western Europe based on literature and interviews with people involved with the development of fuel poverty programs in those countries. Similarly, we compare the experience in Eastern Europe based on literature and interviews. We are grateful for the work of others on this subject, but the misinterpretations are ours alone.

## **Results**

Programs to help low-income households keep their lights on and stay warm or cool vary greatly across US states and European nations. Such elements as identification and certification of low-income households, source and stability of funding, low-income pricing, cash assistance, limiting payments due, restrictions on termination of service, and provision of energy efficiency (including such issues as comprehensiveness) are handled in different ways with varying degrees of success.

The contexts of energy prices and poverty are similar in many ways and vary in others:

Domestic*	Electricity price incr.		2011-1992 hi/low	Gas price incr.			Energy tax incr 2009/1995
	2011/1992	2011/2005		2011/1992	2011/2005	hi/low	
EU 27		26.5%		41.5%			6.8%
Bulgaria		28.1%	28.1%	70.3%			277.8%
Germany	19.0%	5.4%	21.2%	95.9%	18.9%	126.5%	13.6%
France	3.5%	9.8%	16.2%	79.3%	49.2%	92.1%	-11.3%
Hungary	301.2%	57.0%	307.6%	463.3%	180.9%	480.1%	5.2%
United Kingdom	30.0%	63.3%	67.3%	66.9%	62.6%	104.3%	26.5%
US**	40.6%	22.1%	40.6%	83.5%	-14.9%	106.1%	
* Most Europe increases understated: exclude taxes, charges.							
** Electricity to 2010.							
Sources: Eurostat, US DOE EIA.							

All nations have experienced significant price increases, especially for gas (except recently in the US) and to a lesser extent for electricity (except in France and recently in Germany if taxes and other charges are not included). These significant price increases have been accompanied by significant price volatility for electricity (except in the US and Bulgaria) and gas. Rising prices and volatility are difficult for everyone but have a particularly adverse impact on the poor since there is little chance their incomes will keep up with price increases and volatility makes it difficult to budget resources that are already not adequate.

2010	At-risk-of-poverty rate		% decline in %	income threshold (single person)
	before transfers	after		
EU 27	26.7%	16.4%	-38.6%	
Bulgaria	27.1%	20.7%	-23.6%	€ 1,810
Germany	24.2%	15.6%	-35.5%	€ 11,278
France	25.0%	13.5%	-46.0%	€ 12,027
Hungary	28.4%	12.3%	-56.7%	€ 2,544
United Kingdom	31.0%	17.1%	-44.8%	€ 10,263
US*	34.0%	47.9%		€ 17,137
* Poverty rates not comparable; US at 200% FPL. See text. USD 1.30 = 1 Euro.				
Sources: Eurostat, US Census.				

Despite the wealth of Western Europe and the US, a quarter to a third of their populations (perhaps much more in the US) need to worry about basic necessities. Social transfers address up to about half of this problem in Europe, leaving a significant fraction of households in need. While these statistics look similar for Eastern Europe, they are in the context of much lower incomes.<sup>1</sup>

While there is great variation within and across US states and European nations, we made some common high-level observations:

<sup>1</sup> Note that official US poverty statistics are calculated in a different way than in Europe and enjoy little consensus. There is no formal accepted means for determining the anti-poverty impact of social transfers, although there is evidence and consensus that the impact exists. The US “after” calculation includes social transfers but also living costs not included in the former figure.

- Although there is not a common definition of “fuel poverty,” it is broadly accepted that the inability to afford home energy needs is dangerous and socially unacceptable. There is, however, little consensus on government’s role in addressing the issue.
- State or national wealth is a key, but not exclusive, factor in development of low-income home energy policy.
- Energy prices are volatile and generally increasing.
- Low-income housing tends to be inefficient relative to non-low-income housing.
- In Europe, climate policy generally ignores impacts on low-income households. US energy efficiency policy tends to be more closely grounded in narrow economic concerns, which tends to include a concern for affordability. However, the narrowness of the economic view generally diminishes focus on climate and other societal values.

On the most practical level, the fundamental building blocks of low-income home energy policy cross state and national boundaries and include weatherization, other efficiency measures, cash assistance, and restrictions on termination.

**US National programs** In many important respects, the US is a federal system. Although there is national US policy to address low-income home energy needs, implementation – and much policy – is decentralized. There is a national program to weatherize low-income homes, and to provide other energy efficiency measures such as lighting and refrigeration. Similarly, there is a national program of cash assistance to support low-income families’ payment for home energy costs, primarily for heating.<sup>2</sup> Both programs are funded at levels well below need; budgets have been volatile and are currently declining.

However, implementation of these programs is left to the states, within national rules. Equally importantly, it is left to the individual states to determine whether, and how, to fill the gaps between funding and need. Intensity of state effort ranges widely, from zero to almost \$5 per MMBTU of statewide sales of gas and electricity.<sup>3</sup> Typically, supplemental state programs provide additional funding for low-income weatherization and efficiency (almost always financed by utility ratepayers), as well as a variety of ways of providing cash assistance for bill payment. Cash assistance most commonly involves rate discounts financed by utility ratepayers (block rates, dollar or percentage discounts, limiting bills to a specified percentage of income) and, more rarely, grants financed by taxpayers. State low-income energy funding can exceed federal. There are also restrictions on termination of energy service despite nonpayment, *e.g.*, during extreme weather, to protect specified vulnerable populations such as infants and elderly.

InCluESEV (the Interdisciplinary Cluster on Energy Systems, Equity and Vulnerability) is thus essentially correct, although it slightly overstates the case, when it says, “there certainly is not a ‘US approach’ and the implication that there is should be avoided through some more careful phrasing. Across the US in general fuel poverty is not recognised as a distinct problem or policy matter. Some States have particular policies in place which could be seen as forms of fuel poverty intervention (although the term is not used explicitly) but there is nothing like the policy infrastructure or political mobilisation that we are familiar with.”<sup>4</sup> Combatting fuel poverty is in fact national policy in the US, although the national funding for low-income energy bill support and for low-income efficiency weatherization is inadequate. Although the term “fuel poverty” is not used, the concept of households being too poor to afford both energy and other necessities is well understood and has, at times, attracted more generous national funding than today. Nonetheless, it is certainly also the case that US state policy is what determines whether or not more serious efforts are made to address low-income home energy needs.

In our view, the most progressive US model addressing low-income home energy needs is that in Massachusetts, which is also where the authors have done the most work.

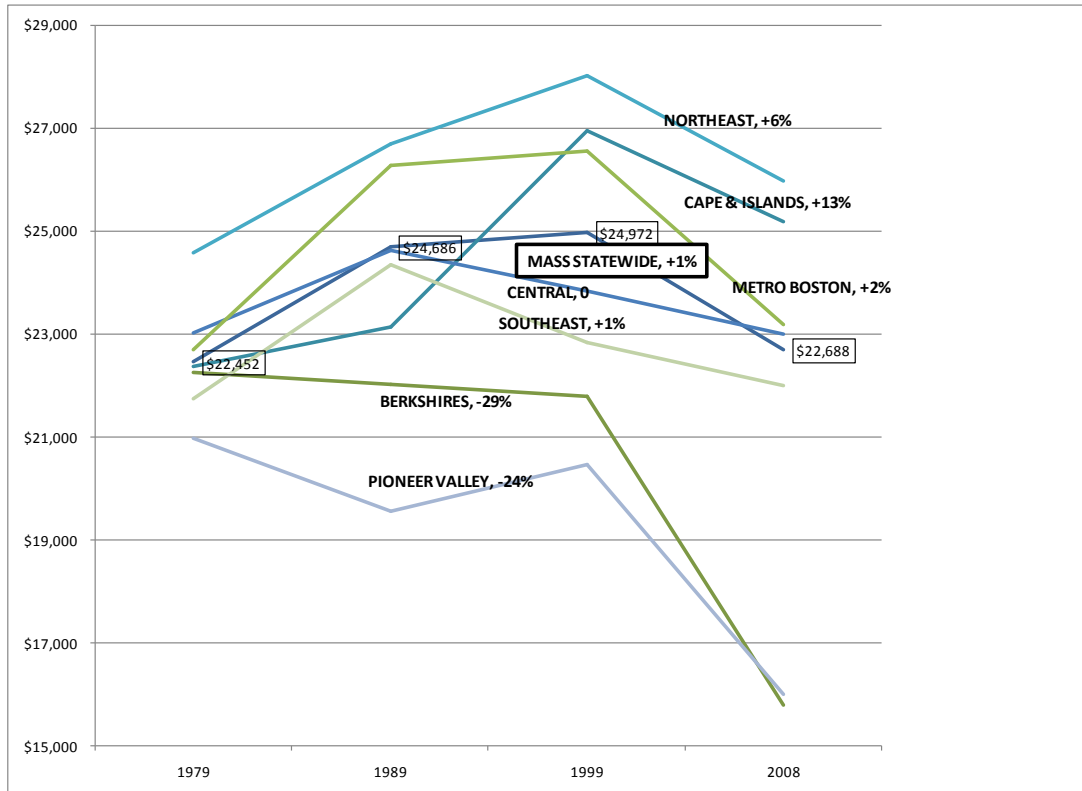
<sup>2</sup> Preference is provided for ameliorating oil heating bills, but benefits are also provided for gas heating and, in some states, cooling. *See* Massachusetts section, below, for more detail.

<sup>3</sup> Authors’ analysis from A. Noss, “Household Income for States: 2009 and 2010 - American Community Survey Briefs” at 5 (US Census no. ACSBR/10-02, Sept. 2011); <http://liheap.ncat.org/Supplements/2010/supplement10.htm>

<sup>4</sup> Professor Gordon Walker (Lancaster University), Dr Rosie Day (Birmingham University), Dr Noel Cass (Lancaster University), Rose Chard (Lancaster University), Professor Harriet Bulkeley (Durham University), Dr Stefan Bouzarovski – Buzar (Birmingham University), Dr Dan Van De Horst (Birmingham University), Interdisciplinary Cluster on Energy Systems, Equity and Vulnerability (InCluESEV), “Submission to Hills Fuel Poverty Review: Response to Interim Report,” personal correspondence from Gordon Walker, Lancaster University, U.K., May 2010 (hereafter InCluESEV Hills Submission). InCluESEV is funded under the Research Council UK’s energy programme which is a cross council initiative.

**The Massachusetts Model**<sup>5</sup> The resources of most low-income families in Massachusetts, as in most of the US, have not improved since at least 1979. Low-income in Massachusetts is usually defined as 60% of state median income and encompasses about a third of the population.<sup>6</sup> The Donahue Institute at the University of Massachusetts analyzed quintiles of Massachusetts incomes over time, showing this for the bottom 20%:

**LOWEST QUINTILE OF MASSACHUSETTS INCOMES  
1979-2008 (2009 \$)  
LITTLE, NO, OR NEGATIVE INCOME GROWTH IN 30 YEARS  
IN NEARLY ALL OF THE COMMONWEALTH  
Source: UMass Donahue Institute**



Energy prices have been volatile and generally increasing in this period, although currently only fuel oil (source of heat for more than a third) is at historically high levels.

Significant advocacy on behalf of Massachusetts low-income energy consumers began in the 1970s and has continued since without a break. The result is an enviable net of protections. The Massachusetts Department of Public Utilities (DPU) first approved utility discount rates for certain low-income customers in 1979.<sup>7</sup> Department-ordered low-income energy efficiency

<sup>5</sup> Based largely on a paper we prepared for IncluESEV (King’s College London, Durham University, Lancaster University) Workshop, “Towards a transatlantic dialogue on energy efficiency, energy poverty and fairness in climate policy,” Durham, North Carolina, US, October 6, 2011. The paper is based on our work, and that of many others, in Massachusetts.

<sup>6</sup> The definition of low-income in the US varies by state and by program; for energy programs, it is as low as 125% of the official federal poverty line. Under these definitions, about a quarter to about a third of a state’s population is usually defined to be low-income for purposes of receiving energy benefits. Such thresholds vary considerably for other programs, also often by state, e.g., health, housing, food, and early childhood education.

<sup>7</sup> American Hoechst Corporation et al. vs. Department of Public Utilities et al., 379 Mass. 408, 411-412 (1980). The decision was pathbreaking at the time:

programs go back almost as far.<sup>8</sup> In the meantime, federal policy had pioneered along a similar track, with Congress enacting what is now the Low Income Home Energy Assistance Program (LIHEAP) in 1974<sup>9</sup> and what is now the Weatherization Assistance Program (WAP) in 1975.<sup>10</sup> However, in 1996 federal WAP funding was cut by about 50%. WAP and LIHEAP currently face similar cuts as part of the response to the US budget crisis.<sup>11</sup>

While these programs came to be delivered by a network of community-based agencies (NGOs), as provided by federal law, the network was not formalized under Massachusetts law until the Restructuring Act of 1997 (effective March 1998),<sup>12</sup> the major purpose of which was to transfer regulation of generation to the Federal Energy Regulatory Commission, which largely marketized it. The Act specifically provided that “The low-income residential demand-side management and education programs shall be implemented through the low-income weatherization and fuel assistance program network and shall be coordinated with all electric and gas distribution companies in the commonwealth with the objective of standardizing implementation.”<sup>13</sup>

The Low-Income Energy Affordability Network (LEAN) was established shortly thereafter by the primary agencies of the community-based network. Established originally to coordinate efficiency programs, LEAN has evolved to coordinate among program delivery agencies and their 94 auditors and 160 contractors, 11 program administrators (including utilities) and their contractors, and five state and two federal agencies (including their contractors), to implement the entire panoply of low-income weatherization and fuel assistance programs in the Commonwealth, of which there are at least seven. LEAN thus plays central roles in program design, monitoring and evaluation, training, and Best Practices coordination.<sup>14</sup>

LEAN delivers efficiency and weatherization services to about 22,000 low-income households per year, with annual budgets of about \$100 million. While federal funding is relatively small and has decreased sharply, Massachusetts state funding has about doubled over the last three years. Over more than 20 years, LEAN has delivered almost \$800 million in efficiency improvements.

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“There can be no question that the department's jurisdiction over the entire rate structure includes the authority to approve a reduced rate for certain customers. The question is whether the rate is unduly or irrationally discriminatory.

“It is “axiomatic in ratemaking” that “different treatment for different classes of customers, reasonably classified, is not unlawful discrimination.” While cost of service is a well-recognized basis for utility rate structures, it need not be the sole criterion. Any number of factors may justify a separate classification. (particular customer may be placed in separate class because of some or all such factors as size, location or nature of business). “The nature of the use and the benefit obtained from it, the number of persons who want it for such a use, and the effect of a certain method of determining prices upon the revenues to be obtained by the city, and upon the interests of property holders, are all to be considered.” [citations omitted]

<sup>8</sup> *E.g.*, the Department of Public Utilities cited “the Commonwealth’s long and successful history (dating back to the 1980s) of delivering energy efficiency services” in its Order regarding energy efficiency programs in Dockets 09-121 *et al.* at vii (Jan. 28, 2010).

<sup>9</sup> First enacted in 1974 as Project Fuel (Office of Economic Opportunity). [www.acf.hhs.gov/programs/liheap/library/history.html#74-79](http://www.acf.hhs.gov/programs/liheap/library/history.html#74-79). LIHEAP was first enacted by P.L. 96-223 in 1981. *Id.*; <http://www.liheapch.acf.hhs.gov/Funding/lhhist.htm>. It is codified at 42 U.S.C. § 8621. *et. seq.*, 45 C.F.R. § 96.80 *et. seq.*; see LIHEAP Program, <http://1.usa.gov/bQ5nYy>.

<sup>10</sup> First enacted in 1975 as Emergency Energy Conservation Program (Community Services Administration). [www.acf.hhs.gov/programs/liheap/library/history.html#74-79](http://www.acf.hhs.gov/programs/liheap/library/history.html#74-79). WAP was enacted in 1977. <http://www.liheapch.acf.hhs.gov/Funding/lhhist.htm>. It is codified at 42 USC sec. 6861. See [www.eere.energy.gov/weatherization](http://www.eere.energy.gov/weatherization), [www.waptac.org/sp.asp?id=1437](http://www.waptac.org/sp.asp?id=1437).

<sup>11</sup> LIHEAP funding ranged from nearly \$2 billion in 1981, through just over \$1 billion in 1986, over \$5 billion in 2009 and 2010, and down again to \$3.4 billion in 2011. <http://liheap.ncat.org/Funding/lhemhist.htm>. “The FY 2012 Appropriations Act funds Weatherization at \$68,000,000. This funding level is less than one-third of that recently provided annually through Appropriations for WAP.” [http://waptac.org/data/files/website\\_docs/government/guidance/2012/wpn\\_12-2\\_grantee\\_allocations.pdf](http://waptac.org/data/files/website_docs/government/guidance/2012/wpn_12-2_grantee_allocations.pdf).

<sup>12</sup> St. 1997, c. 164; low-income efficiency provisions affirmed by the Green Communities Act, G.L. c. 25, sec. 19(c) (St. 2008, c. 169, sec. 11).

<sup>13</sup> G.L. c. 25, sec. 19 (St. 1997, c. 164, sec. 37). re-enacted by The Green Communities Act, G.L. c. 25, sec. 19(c) (St. 2008, c. 169, sec. 11). The Green Communities Act also designated a seat for the network on the newly created Energy Efficiency Advisory Council. St. 2008, §11; GL, c. 25, §22(a).

<sup>14</sup> *E.g.*, PL 111-5; [http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=111\\_cong\\_bills&docid=f:h1enr.pdf](http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=111_cong_bills&docid=f:h1enr.pdf); Mass. St. 2005, c. 240, §19(a).

Deep, comprehensive, cost-effective investments are made in low-income homes, with a focus on upgrading inefficient heating systems<sup>15</sup> and other large appliances as well as air sealing, lighting, health and safety. This “whole house” approach results in savings to low-income families of typically 20%+ of heating bills (from air sealing),<sup>16</sup> 20%+ of heating bills (from heating system replacements), and 10% of electricity bills. Redundant quality control assures these savings.

Innovative and renewable energy measures in low-income settings include solar hot water, high efficiency domestic hot water and clothes washers, micro-combined-heat-and-power, high-efficiency wall insulation, smart electric strips, and LED lamps. All of these energy efficiency and renewable energy measures are delivered to low-income households at no cost to the householders other than the standard system benefits charges on their electric and natural gas bills.

Low-income energy price discounts now range to 35% of the total utility bill, depending on the utility, and include 25% for natural gas, the predominant heating fuel.<sup>17</sup> The federal LIHEAP (Low Income Home Energy Assistance Program, or Fuel Assistance), administered by the Massachusetts Department of Housing and Community Development (DHCD), supplements rate discounts by amounts that vary with the amount of federal funding set by the US Congress for the program.

Utility Arrearage Management Programs were established by law in 2005 after several LEAN-led pilots. They are overseen by the DPU, which expanded them in 2009. The programs resulted in 2011 debt forgiveness by the utilities of nearly \$17 million and payments of more than \$15 million by low-income customers who would otherwise have faced service termination. The utility arrearage management programs are open to all verified low-income customers in arrears for at least 60 days who owe at least \$300 on their gas bills and/or \$100 on their electric bills. In exchange for debt forgiveness, customers agree to a levelized budget billing plan and to pay an affordable amount on time each month. Fuel assistance, or LIHEAP, is credited to the customer before the monthly payment amount is calculated, and participants receive the utility low-income discount rate. Program participants are referred to the Network for weatherization and energy efficiency services to permanently lower their bills.

The Restructuring Act also codified important consumer protections (some previously only in DPU regulations),<sup>18</sup> including a mandate for utility energy efficiency investments financed by a charge on rates.<sup>19</sup> Thus underlying these programs is a longstanding safety net of customer service protections which include:<sup>20</sup>

- Protection from disconnection while a bill is in dispute.<sup>21</sup>

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<sup>15</sup> Repairs and replacements as well as cleaning and tuning oil systems and replacing oil tanks.

<sup>16</sup> A majority of homes are heated by gas, fewer than 10% by electricity, and the balance by oil.

<sup>17</sup> *E.g., Fitchburg Gas and Electric Light Company*, D.P.U. 11-01 (electric)/11-02 (gas) at 462 (electric), 480 (gas) (Aug. 1, 2011). Statute directs the DPU to “require that distribution companies provide discounted rates for low income customers comparable to the low-income discount rate in effect prior to March 1, 1998...The cost of such discounts shall be included in the rates charged to all customers of a distribution company. Each distribution company shall guarantee payment to the generation supplier for all power sold to low-income customers at said discounted rates. Eligibility for the discount rates established herein shall be established upon verification of a low-income customer’s receipt of any means tested public benefit, or verification of eligibility for the low-income home energy assistance program, or its successor program, for which eligibility does not exceed 175 per cent of the federal poverty level ... Each distribution company shall conduct substantial outreach efforts ... and shall report to said division, at least annually, as to its outreach activities and results. Outreach may include establishing an automated program of matching customer accounts with lists of recipients of said means-tested public benefits programs and based on the results of said matching program, to presumptively offer a low-income discount rate to eligible customers so identified.” G.L. c.164, §1F(4)(i).

<sup>18</sup> For example, all existing DPU consumer protection regulations were adopted by the General Court, though the DPU is allowed to make them more protective. St. 1997, §193; GL, c.164, §1F(7). (“The department is authorized and directed to retain or make increasingly protective of retail ratepayers the rules adopted by the department and codified at Title 220 of the Code of Massachusetts Regulations, sections 25, 27, 28, and 29, and the policies reflected in the department’s adjudication of customer complaints, and, notwithstanding anything in this chapter to the contrary, shall continue to apply them to generation and thus to all generation companies, generation facilities, aggregators, and suppliers.”)

<sup>19</sup> St. 197, c. 164, § 37; GL, c.25, § 19. The DPU had been ordering utility-specific programs. This mandate was expanded and supported with additional funding by the Green Communities Act. St. 2008, c. 169, §11; GL, c. 25, §§19, 21(b), 21(d)(2).

<sup>20</sup> See Charlie Harak, *Utilities Advocacy For Low-Income Households In Massachusetts* (National Consumer Law Center, 2d ed. 2007), <http://www.masslegalservices.org/system/files/utility-handbook-2d-ed.pdf>. There are also rules regarding billing and collection.



- A goal of universal service.<sup>22</sup>
- Arrearage management (forgiveness) for low-income customers in arrears who keep to payment plans.<sup>23</sup>
- Customers in arrears not in the arrearage management program have the right to negotiate a payment plan at least four months long to eliminate the arrears and cannot have service terminated during the repayment term.<sup>24</sup>
- Protections against service terminations (“No company may shut off or fail to restore utility service . . .”) for customers with a serious illness in the household, with an infant in the household, and during the winter period of Nov. 15 to Mar. 15.<sup>25</sup>
- Service to households where all occupants are over age 65 cannot be terminated without permission of the DPU.<sup>26</sup>

Regulatory oversight, including of federal programs, is primarily at the state level<sup>27</sup> and includes paperwork audits, inspection and quality control, process and impact evaluation, and oversight of program development, innovation, comprehensiveness, and cost-effectiveness.<sup>28</sup>

Stakeholder communication is a key part of the low-income efficiency programs to both maintain political support and promote efficient operation. In addition to daily management and the Energy Efficiency Advisory Council (EEAC), communication is accomplished largely through a Best Practices task force (“Best Practices”) that brings together the implementing agencies and program administrators (mostly utilities) and all other interested stakeholders. Interested stakeholders usually include DHCD and a consultant on behalf of the EEAC; all others are welcome. Any topic can be raised at Best Practices, which usually focuses on training and recruitment of contractors and auditors, program delivery questions, and assessment of possible new measures and installation protocols. Where appropriate, statewide decisions are made. A similar Best Practices working group has been established for the utility arrearage management programs. The group meets at least quarterly to discuss implementation, participation rates, and outreach, as well to solve problems and share solutions. The working group comprises all of the utilities, the Network, the DPU, DHCD and the Attorney General.

Additional coordination of the agencies is conducted by periodic meetings of the lead agencies (LEAN), to which other stakeholders are also invited; as well as monthly meetings of agency energy directors (Massachusetts Energy Directors Association, MEDA). LEAN and MEDA oversee all low-income energy programs.

Energy efficiency programs targeting low-income households are important for more than simply energy policy reasons. Research has shown that programs designed to keep essential utility services affordable for low-income families provides benefits not only to those families but also to society as a whole. Total benefits far outweigh the costs of the programs. For example, low-income efficiency and weatherization programs are credited with the following benefits in addition to energy

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<sup>21</sup> “No distribution or generation company may disconnect or discontinue service to a customer for a disputed amount if that customer has filed a complaint which is pending with the department.” G.L. c.164, §1F(2).

<sup>22</sup> “The department is authorized and directed to promulgate rules and regulations to establish service quality standards for each distribution, transmission, and gas company, including, but not limited to, standards for universal service . . .” G.L. c.164, §1F(7).

<sup>23</sup> St. 2005, c. 240, §19(a).

<sup>24</sup> St. 2005, c. 240, §19(b).

<sup>25</sup> G. L. c. 164, §§124A, 124 F, 124H ; 220 CMR 25.03(1). The DPU often extends winter moratoria to mid- or late-April, depending on the weather and energy prices.

<sup>26</sup> 220 CMR 25.05.

<sup>27</sup> Federal programs operate within federal regulations with implementation delegated to the states, which are overseen by federal agencies.

<sup>28</sup> *E.g.*, pursuant to Green Communities Act. St. 2008, c. 169, §11; GL, c. 25, §§19, 21(b), 21(d)(2), 22(a); Global Warming Solutions Act (GWSA), G.L. c. 21N; see <http://www.mass.gov/dep/air/climate/gwsa.htm> for regulatory actions under the GWSA.

savings.<sup>29</sup>

<b>Category</b>	<b>Value (\$/participant/year unless noted)</b>		
<b>UTILITY (avoided costs)</b>			
Arrears	\$2.61		
Write-offs	\$3.74		
Termination, reconnection	\$0.43		
Avoided discount	varies by utility		
Collection: calls	\$0.58		
Collection: notices	\$0.34		
Insurance	per WAP evaluation when done		
<b>PARTICIPANT (benefits)</b>			
Comfort	\$101.00		
Reduced forced mobility	could be quantified		
Reduced noise	\$30.00		
Increased Light quality and life (O&M)	\$56.00		
Price hedge value (one-time)	\$0.76/MMBTU; \$0.005/kWh		
Property value increase* (one-time)	\$949.00		
Reduced home maintenance	\$35.00		
Appliance & equipment maintenance	\$54.00		
Improved health**	\$19.00		
Increased safety (fire, CO)	\$38.67		
Refrigerator recycling (one-time)	\$172.53		
Early replacement of refrigerator	could be quantified		
Window air conditioner	\$49.50		
Economic development for low-income	\$0.51/therm ~ \$124; \$0.042/kWh ~65		
<b>OWNERS OF RENTAL PROPERTY (per unit; in addition to above when applicable and not duplicative)</b>			
Reduced tenant complaints	\$19.61		
Increased ease of finding tenants	\$0.96		
Reduced maintenance	\$66.73		
Property value increase	\$17.03		
Increased durability	\$36.85		
Appliance & equipment maintenance	\$3.91		
<b>NOTES</b>			
*Better research available; see footnote.			
** Further research needed.			
<b>Total per participant per year</b>	<b>\$390.87</b>		
<b>plus Total per participant one-time (gas)</b>	<b>\$1,258.00</b>		
(ex discount, insurance, landlord benefits)			

<sup>29</sup> E.g., NMR, "Massachusetts Special and Cross-Sector Studies Area, Residential and Low-Income Non-Energy Impacts (NEI) Evaluation" (Tetra Tech, Aug. 15, 2011). Some of the foregoing benefit values have been negotiated based on other sources. E.g., Mark Bolinger *et al.*, "Quantifying The Value That Wind Power Provides As A Hedge Against Volatile Natural Gas Prices" (Lawrence Berkeley National Laboratory, LBNL-50484, June 2002) (price hedging value); "Energy Efficiency in Massachusetts: Engine of Economic Growth," Environment Northeast, October 2009 (economic development value). At this writing, Massachusetts regulatory approval for these values is pending. Regarding the benefit of enhanced property, see the larger values computed by, e.g., Nevin, *et al.*, "Evidence of Rational Market Valuations for Home Energy Efficiency," *The Appraisal Journal*, p. 403 (Appraisal Institute, 1998) (one-time \$20.70 per dollar of energy



**Other US States** As noted, there is no single model of low-income assistance across the US; rather, each state has adopted a program that meets its particular philosophy and circumstances. States vary in overall wealth,<sup>30</sup> poverty level,<sup>31</sup> and policy attitudes about carbon climate, and solidarity.<sup>32</sup>

However, while the details of programs vary considerably, they all fall within these broad categories:

- Affordability programs, which provide direct assistance in paying energy bills: generally, assistance is either a fixed dollar amount or a fixed percentage of the bill. Some programs include an arrearage management (forgiveness) component. In some programs, benefits are targeted depending on income. In others, benefits are targeted according to special needs such as a disability. In a few states, low-income household payments are limited to a specified percentage of income. A few states supplement the federal LIHEAP grant. Most states (36 of 51, including the District of Columbia (DC)) have one or more cash assistance programs of some kind,<sup>33</sup> although the level of effort varies considerably.<sup>34</sup>
- Consumer protections, such as collection restrictions and installment billing requirements, which make it easier to pay energy bills on time; many states restrict termination for non-payment in cases of extreme weather and/or for vulnerable populations;<sup>35</sup>
- Efficiency and weatherization programs in 37 states including DC,<sup>36</sup> which make investments to help consumers control their energy bills by reducing their need for energy. These programs vary considerably in intensity of effort,<sup>37</sup> but usually

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savings). Nevins/Watson regressed actual home sale prices against homeowner bill reductions from identified energy savings.

<sup>30</sup> Median household income varies among the states between \$36,851 and \$68,854; percent in poverty (defined as 200% of the Federal Poverty Line) between 17.0% and 43.8%. States with relatively less wealth or greater poverty tend to spend less on low-income supports. Oppenheim, Jerrold and Theo MacGregor, "Energy Efficiency Equals Economic Development: The Economics of Utility System benefit Funds," at 56-57, (June 2008),

<http://www.democracyandregulation.com/detail.cfm?artid=135&row=0>. However, one state with median household income ten percent lower than the US median and poverty higher than the US average (Ohio) is nonetheless ninth most generous. Yet a few states with below-average levels of poverty and median incomes more than 20% higher than the US median provide relatively little (Connecticut, Maryland) or virtually nothing (Virginia). Authors' analysis from A. Noss, "Household Income for States: 2009 and 2010 - American Community Survey Briefs" at 5 (US Census no. ACSBR/10-02, Sept. 2011); <http://liheap.ncat.org/Supplements/2010/supplement10.htm>.

<sup>31</sup> The US Federal Poverty Line (FPL) is widely regarded as an inadequate measure of poverty. Many anti-poverty programs set eligibility thresholds at 200% FPL or higher. On that basis, the US Census estimates that the fraction of Americans in poverty is 34.0%-47.9%, the latter calculation including social transfers but also living costs not considered in the former figure. K. Short, "The Research Supplemental Poverty Measure: 2010" at 8, 10, Table 4, 11 (US Census Bureau report P60-241, Nov. 2011), <http://www.census.gov/prod/2011pubs/p60-241.pdf>. The range of poverty among states is very wide. Even at 125% FPL, it ranges from 11% (New Hampshire) to 28% (Mississippi). A. Bishaw *et al.*, "Poverty: 2008 and 2009 American Community Survey Briefs" at 3-4 (US Census Bureau, no. ACSBR/09-1, Sept. 2010), <http://www.census.gov/prod/2010pubs/acsbr09-1.pdf>.

<sup>32</sup> While the Federal policy has largely been to question or ignore climate impacts, states such as Massachusetts and California have significant climate policies. *E.g.*, Mass. Green Communities Act, St. 2008, c. 169; Mass. Global Warming Solutions Act (GWSA), G.L. c. 21N.

<sup>33</sup> <http://liheap.ncat.org/Supplements/2010/supplement10.htm>, includes further state-by-state details.

<sup>34</sup> Between zero and \$4.74 per MMBTU of statewide sales of gas and electricity.

<http://liheap.ncat.org/Supplements/2010/supplement10.htm>; US DOE EIA.

<sup>35</sup> Prepayment meters are rare, but have been adopted by a small number of municipal utilities. As "smart meters" are installed in some states, there is a concern that terminations for nonpayment will become easier and therefore more common.

<sup>36</sup> <http://liheap.ncat.org/Supplements/2010/supplement10.htm>.

<sup>37</sup> <http://aceee.org/energy-efficiency-sector/state-policy/aceee-state-scorecard-ranking>; [http://aceee.org/files/pdf/fact-sheet/Scorecard\\_FS.pdf](http://aceee.org/files/pdf/fact-sheet/Scorecard_FS.pdf) "Total budgets for electricity efficiency programs increased to \$4.5 billion in 2010, up from \$3.4 billion in 2009. Combined with natural gas program budgets of about \$1 billion, total energy efficiency budgets in 2010 equal about \$5.5 billion. Given the increasing regulatory commitments to energy efficiency, this growth will likely continue over the next decade. Twenty-nine (29) states have either adopted or have made significant progress toward the adoption of the latest energy-saving building codes for homes and commercial properties – up from twenty in 2010 and ten in 2009. Twenty-four (24) states have adopted an Energy Efficiency Resource Standard (EERS), which sets long-term energy savings targets and drives utility-sector investments in energy efficiency programs." <http://aceee.org/press/2011/10/aceee-massachusetts-overtakes-califo>. On the other hand, "a group of about a dozen states remains year after year at the bottom of the ACEEE State Energy Efficiency Scorecard." <http://aceee.org/research-report/e126>

include ratepayer-subsidized efficiency measures for low-income and non-low-income customers as well as education programs, which teach consumers about prudent energy use and counsel them about budgeting; some also include high-efficiency building codes and appliance efficiency standards.<sup>38</sup>

Programs usually include more than one of these components. Most programs also include outreach and evaluation components.<sup>39</sup>

Such programs help low-income participants by lowering the fraction of their incomes devoted to energy bills (the energy burden). In the United States, a family depending on a minimum-wage earner (*i.e.*, below the official poverty line for a family of four) pays about four times the proportion of income on energy as does a household with the median income. This low-income energy burden has been estimated at 12 percent, though others, such as senior citizens on fixed incomes, can pay up to 35% of their income on energy.<sup>40</sup> Low-income families unable to bear such high burdens find themselves forced to go without power at times, to move, or to forgo other necessities such as food or medicine in order to pay their electricity bills.

**France** Electricité de France (EDF) was founded in 1946 as the monopoly provider of electricity in France.<sup>41</sup> In the preamble to its public service contract between itself and the State, EDF begins with the premise (pursuant to French law) that access to electricity is a right, not a privilege.<sup>42</sup> With the introduction of a competitive market for electricity in 2000, France also introduced the principle of “Social Tariffs.”<sup>43</sup> EDF offers discounted rates of between 40% and 60% on the first 100 kilowatt-hours per month of electricity usage, called the “Price of First Necessity,” (Tarif de Première Nécessité - TPN), and through the “Special Rate Solidarity” (Tarification Spéciale Solidarité - TSS) for gas usage, to those customers who are income-eligible for Universal Health Coverage. Current eligibility level is € 1360 per month for a couple with two children.<sup>44</sup> Such assistance can result in electricity bill reductions of up to € 140 per year and gas bill reductions of up to € 156 per year, depending on the composition of the household and actual usage. It should also be noted that French electricity prices are generally lower than others.

For customers who still have difficulties paying their energy bill, families may make a request for assistance from the Housing Solidarity Fund (“FSL”) managed by the General Council (EDF is the largest financial contributor to the FSL after local authorities).<sup>45</sup> The FSL helped nearly 300,000 customers in 2009. In addition, EDF provides counselors for those unable to manage their energy bills and may also refer payment-troubled customers to special mediators who partner with EDF to provide services such as education about better energy usage, bill management and access to other helping agencies and services such as community centers for social action.<sup>46</sup> EDF field staff have used service limiters, in lieu of total disconnection, for a limited period of time while a customer seeks social services.<sup>47</sup>

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<sup>38</sup> In some states, law may prohibit low-income-specific programs that use ratepayer funds. So it is thought, for example, in Arkansas due to a vague court ruling. Arkansas therefore has no low-income energy efficiency program. However, in an initiative with which the authors were involved, Arkansas does target a weatherization and energy efficiency program to “severely energy-inefficient homes” which is “piggybacked” onto the federal WAP program to allow low-income utility customers to participate with no out-of-pocket costs.

<sup>39</sup> Oppenheim, Jerrold and Theo MacGregor, “Low Income Consumer Utility Issues: A National Perspective” (Oct. 2000), <http://www.democracyandregulation.com/detail.cfm?artid=22>.

<sup>40</sup> Oppenheim, Jerrold and Theo MacGregor, “Energy Efficiency Equals Economic Development: The Economics of Utility System benefit Funds” at 5 (June 2008), <http://www.democracyandregulation.com/detail.cfm?artid=135&row=0>.

<sup>41</sup> Hazel M. Ranninger, “A Key Role for Service Limiters in the Social Policy for Low-Income Customers at EDF,” presented at Domestic Use of Electrical Energy Conference of 1999.

<sup>42</sup> “Contrat de Service Public entre L’Etat and EDF,” [http://fr.edf.com/fichiers/fckeditor/Commun/Edf\\_en\\_france/documents/CSP-EDF-Etat.pdf](http://fr.edf.com/fichiers/fckeditor/Commun/Edf_en_france/documents/CSP-EDF-Etat.pdf)

<sup>43</sup> Dubois, Ute and Jean-Michel Glachant, “The three “worlds” of fuel poverty policy,” InCLuESEV Workshop “Towards a transatlantic dialogue on energy efficiency, energy poverty and fairness in climate policy,” Durham, NC (October 6-7, 2011).

<sup>44</sup> <http://particuliers.edf.com/abonnement-et-contrat/les-prix/les-prix-de-l-electricite/tarif-de-premiere-necessite-47779.html>;  
<http://particuliers.edf.com/abonnement-et-contrat/les-prix/les-prix-du-gaz-naturel/tarif-special-solidarite-47789.html>

<sup>45</sup> Law No. 90-449 of 31 May 1990 instituted the solidarity fund for housing (FSL) to help households with certain housing difficulties. A 2004 reform of this statute, which came into force on 1 January 2005, led to integrate FSL funds with funding provided by the utility operators to avoid interruption of water services, electricity, energy and telephone. <http://www.globe-expert.eu/quixplorer/filestorage/Interfocus/4-Geopolitique/40-Politique/400-France/400-SRCNL>

<sup>46</sup> <http://fr.edf.com/service-public/acces-a-l-energie/des-dispositifs-societaux-en-appui-48844.html>

<sup>47</sup> Hazel M. Ranninger, “A Key Role for Service Limiters in the Social Policy for Low-Income Customers at EDF,”

Energy efficiency policy in France, as in most of Europe, is driven primarily by carbon and climate policy. Reduction goals are set in accordance with national and European commitments to reduce energy consumption and CO<sub>2</sub> emissions by 20% by 2020, with a fourfold emissions reduction by 2050. A National Programme against Climate Changes (PNLCC) was adopted in January 2000, reinforced in 2004 and 2006 with a Climate Plan, and an Environment Round Table (“Grenelle de l’Environnement”) held in 2007 to refine key principles of government policy on ecological and sustainable development for the coming five years.<sup>48</sup> A National Energy Efficiency Action Plan was formulated based on this Roundtable, which includes a plan to build energy-efficient housing beginning in 2010, widespread development of “Green Housing” by 2012, passive or positive-energy-use houses beginning in 2020, a ban on incandescent light bulbs and single-glazed windows in new construction beginning in 2010, thermal renovation of public buildings and financial incentives for private buildings beginning within the next five years, and carbon and energy efficiency assessments of all organizations of more than 50 people.<sup>49</sup> In addition, in 2010, the state, perhaps recognizing the detrimental impact of the cost of climate change policy on low-income households, instituted a program called “Habiter Mieux” (“Living Better”) which provides financing for energy efficiency improvements for low-income households. The program includes insulation of homes, replacement of boilers, efficient appliances, and energy-use education.<sup>50</sup>

**Germany**<sup>51</sup> German policy is also underpinned by strong philosophies of minimum income, solidarity, and concern about climate change. Much of this policy is national, but differences are minimal even where implementation is decentralized. The income policy is reasonably universal, for life, and designed to cover all necessities (with calculated benefits for housing and heat, up to specified maximums). Despite this intent, it is commonly understood that energy price increases have reduced the adequacy of social support; no adjustments have resulted. Presumably because of the assumption that all needs are covered (heat by calculation, electricity in the general grant), there is no specific cash assistance for energy.

Climate policy includes aggressive targets (reduce greenhouse gas emissions 80% from 1990 to 2050, building sector energy consumption 80% from 2008 to 2050) and aggressive programs to reach them. Programs include feed-in tariffs for renewable power and combined-heat-and-power – financed through electric rates – as well as energy efficiency programs. The latter include strict weatherization codes that are regularly updated, financed through rents when applied to landlords, as well as subsidies, subsidized loans, and tax credits. EU appliance standards also apply. Low-income households pay their share of these policies through their electric bills (which also include 19% VAT) – the magnitude of which is exacerbated by large industrials’ ability to escape a large fraction of the charges – and their rents, but receive little immediate economic benefit in return. The German government has supported a small low-income program operated by Caritas that provides 70 Euros per household in measures such as efficient lights, resulting in average 13% bill savings – less than the cost of the feed-in tariffs – and that has so far (about 41 months) served only about 70,000, in about 100 places, of the 600,000 households that have faced termination of service due to inability to pay for it.

**United Kingdom**<sup>52</sup> The UK has a formal policy to abolish fuel poverty, which it defines as needing to spend more than ten percent of income to provide specified levels of heat. It is estimated that as many as 21% of UK households are in fuel poverty, somewhat less than the 31% identified as at risk of poverty. The problem is addressed with cash payments, discount rates, and energy efficiency programs that are primarily targeted to the UK’s objective of reducing greenhouse gas emissions by 80% from 1990 to 2050. Efficiency programs other than codes, standards, and labels are implemented by suppliers and financed through rates; a portion of efficiency funding is directed to addressing affordability. However, energy cost increases have overwhelmed efficiency savings. Pre-tax electricity prices have risen 63% since 2004, gas 73% – bills have about

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presented at Domestic Use of Electrical Energy Conference of 1999.

<sup>48</sup> Chedin, Gregory and Dr. Didier Bosseboeuf, “Energy Efficiency Trends, Policies & Measures in France (1990-2007)”, Monitoring of Energy Efficiency in EU 27, Norway and Croatia (ODYSSEE-MURE), Angers (Sept. 2009).

<sup>49</sup> *Id.* at 62.

<sup>50</sup> Dubois, Ute and Jean-Michel Glachant, “The three “worlds” of fuel poverty policy,” at 13-14; InCLuESEV Workshop “Towards a transatlantic dialogue on energy efficiency, energy poverty and fairness in climate policy,” Durham, NC (October 6-7, 2011).

<sup>51</sup> We are grateful for the assistance of the following in preparing this summary: Ria Langheim, Uwe Leprich, Sabine Lehmann, Theo Tekaats, Marion Weil, and Gregor Ziorkewicz. Additional information from N. Wasserman and C. Neme, Achieving Energy Efficiency – A Global Best Practices Guide on Government Policies 64-67 (Sleeping Lion Consulting and Regulatory Assistance Project, Feb. 2012).

<sup>52</sup> Campbell, R. (National Energy Action) (2011), “Fuel Poverty in the United Kingdom: Reconciling social and environmental objectives,” at 1, 3,4, 5, 7, 8, for InCLuESEV; Boardman, B. (Oxford) (2011), “Overview of fuel poverty issues” at 3, 6, 13, 14, for International Energy Agency; InCLuESEV Hills Submission; A Wagner *et al.*, “Energy Efficiency Policies and Measures in the UK 2009” at 37-38 (2009), [http://www.odyssee-indicators.org/publications/PDF/UK\\_nr.pdf](http://www.odyssee-indicators.org/publications/PDF/UK_nr.pdf).

doubled when also considering taxes and greenhouse gas-related charges.<sup>53</sup> These averages disguise the fact that low-income households tend to occupy housing that is far less energy-efficient than average – two-thirds of the homes at the lowest level of efficiency are occupied by fuel-poor households.<sup>54</sup> Nevertheless, reported disconnections for non-payment have dropped to close to zero – because the widespread use of prepayment meters allows low-income households to “disconnect themselves” by their inability to feed the meter.

**Eastern Europe (Hungary, Bulgaria)**<sup>55</sup> The most salient poverty in Eastern Europe combines the overall low level of incomes with historical institutional inefficiencies which have led to very large recent price increases. The poverty income threshold in Hungary is 23% that of the Germany-France-UK average; Bulgaria 16%. The idea of fuel poverty is almost meaningless as it stretches into the middle class; by Western European standards, a very large fraction of the population is poor. “For almost 80 per cent of Eastern Europeans labour incomes are below or at most comparable to those of the poorest 20 per cent of Europeans living in the richer Central and Nordic countries.”<sup>56</sup> This is made even more difficult by sharp energy price increases caused by elimination of subsidies embedded in the central planning process, as well in Hungary by the replacement of oil and cheap dirty coal with cleaner but more expensive natural gas. (Security of supply remains an overriding issue for Bulgaria.) Electricity prices since 2004 have increased 42% in Bulgaria, where price liberalization proceeded relatively slowly to provide some measure of affordability protection, and 68% in Hungary (quadruple since 1991); gas prices have soared 77% in Bulgaria, tripled in Hungary (up more than 5-1/2 times since 1991). This is considerably faster than incomes have risen; so, for example, the median energy burden in Hungary jumped from 12% to 16% from 2005 to 2008; more than 60% of Bulgarian households report being unable to afford to keep their homes sufficiently warm and a third are in arrears. In response, Bulgaria maintains a block tariff, caps gas prices, provides direct assistance, and tolerates elevated levels of non-payment. The legacy of former wasteful construction practices also remain, including inefficient district heating networks. While East and West have become much more efficient – cutting energy intensity in half on average since 1990 – Bulgaria and Hungary on average use energy four times as intensively as the EU average.

In Hungary and Bulgaria, most energy efficiency efforts are focused on subsidies and loans (no full grants or other focus on the lowest-income households) for renovations and new construction, as well as upgrading large boilers and preferential prices to renewables suppliers. Metering of district heating is underway in both countries. Since consumer consumption is so low in Bulgaria, it is projected that most efficiency improvements will be taken in the form of decreased deprivation, *i.e.*, increased heating comfort and appliance usage.

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<sup>53</sup> See generally S. Herrero (Central European University), (2011), “Alleviating Fuel Poverty In Hungary” at appendix, for InCluESEV, on the issue of taxation of gas and electricity.

<sup>54</sup> This tendency is, of course, commonplace. *E.g.*, S. Herrero (Central European University), (2011), “Alleviating Fuel Poverty In Hungary” at appendix, for InCluESEV.

<sup>55</sup> S. Herrero (Central European University), (2011), “Alleviating Fuel Poverty In Hungary” for InCluESEV; Bouzarovski – Buzar, S. (Univ. of Birmingham) (2011), “Unpacking the institutional embeddedness of energy poverty: a Bulgarian case study,” for InCluESEV; Dubois, U. (Institut Supérieur de Gestion), Glachant, J. (Florence School of Regulation) (2011), “The three ‘worlds’ of fuel poverty policy,” for InCluESEV; dr. László Elek, “Energy Efficiency Policies and Measures In Hungary” at 7, 14, 22, 36-38 (2009), [http://www.odyssee-indicators.org/publications/PDF/hungary\\_nr.pdf](http://www.odyssee-indicators.org/publications/PDF/hungary_nr.pdf); L. Kostadinov, “Energy Efficiency Policies and Measures in Bulgaria” at 9. 23-24, 30-31, 33-37, 49-52 (2009), [http://www.odyssee-indicators.org/publications/PDF/bulgaria\\_nr.pdf](http://www.odyssee-indicators.org/publications/PDF/bulgaria_nr.pdf).

<sup>56</sup> A. B. Atkinson and E. Marlier, eds., “Income and living conditions in Europe” at 276 (Eurostat 2010).



## Conclusions

Strategies to combat the impact of poverty on the ability to meet home energy needs are very similar across the developed world, though the depth and breadth of tactical programs vary considerably. We hypothesized that a decentralized Federal system allows for experimentation, as well as the development of programs that meet the specific needs and values of different places. A disadvantage of federalism is the lack of uniformity, and the fairness that implies, a characteristic which central control provides. From the standpoint of low-income concerns, federalism allows for development of the most progressive and comprehensive approaches where the context so permits, as in Massachusetts, but central control permits greater breadth and consistency of assistance to low-income consumers. The Federal system in the US has allowed for useful differences in those states with the political sensibility to do more than average for poor people. But this does not appear to be an observation that is generalizable elsewhere.

We also hypothesized that the approach to fuel poverty would vary depending on the current political and cultural consensus on underlying values. However, we found general acceptance of low-income energy assistance across these boundaries, as well as wide gaps in the general safety net, irrespective of solidarity philosophy. Much of Western Europe, like Massachusetts, supports its citizens out of a sense of solidarity and shares this value so strongly that it provides a relatively comprehensive social safety net. In other parts of Western Europe – like much of the middle of the US – there is comfort with larger differences in incomes and living conditions. However, we did not observe a useful correlation: nations with a strong sense of solidarity tolerate loss of access while states with a consensus around individualism nevertheless offer support to their low-income population. Perversely, the assumption that an assistance level, designed based on a sense of solidarity, covers all expenses, may be an obstacle to providing adequate support in a rising cost environment. We conclude there is a complex web of local factors that determines policy at any particular time, including other economic pressures and changes in the economic context outpacing the policymaking calendar. These factors underscore the value of local advocacy.

Similarly, the wealth of a nation or state does not appear to be a reliable indicator of a demonstrated concern for its low-income population. Certainly wealth may be a pre-condition for certain levels of low-income support, and lack of wealth may preclude it. In that sense, the ability of a nation or state to support its low-income population is something of a luxury. But nations or states of roughly comparable wealth tolerate different levels of poverty. The median UK worker makes 34% more than the median French worker,<sup>57</sup> yet the UK tolerates an at-risk-of-poverty rate that is 24% higher (31.0% vs. 25.0%),<sup>58</sup> not to mention a system that allows low-income households to “disconnect themselves” from essential utility service. Virginia is the eighth richest state in the US by median household income yet it provides no cash energy assistance and a very small budget for low-income house repairs.<sup>59</sup> Levels of poverty vary considerably across the developed world, as does the willingness to address it and the approaches considered appropriate.

We draw these lessons from the similarities and variations in approaches that we observe in nations’ and states’ approaches to addressing low-income home energy needs:

1. Inadequate access to home energy is dangerous to life and therefore must be addressed,<sup>60</sup> while recognizing that the true issue is underlying poverty in general.
2. A debate over the lack of a common definition of fuel poverty may divert attention from poverty as the true issue. In the UK and elsewhere, “fuel poverty” is defined as the condition where the energy bill needed to provide a defined standard of heat is in excess of an energy burden of 10% of income.<sup>61</sup> In other places, there may be no standard or a

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<sup>57</sup> A. Atkinson, *et al.*, “Income and living conditions in Europe” at 279 (Eurostat 2010).

<sup>58</sup> M. Antuofermo, *et al.*, “Population and social conditions” at 3 (Eurostat, Sept. 2012). On an after-transfer basis, the difference is even greater, 27% (17.1% v. 13.5%).

<sup>59</sup> A. Noss, “Household Income for States: 2009 and 2010 - American Community Survey Briefs” at 5 (US Census no. ACSBR/10-02, Sept. 2011); <http://liheap.ncat.org/Supplements/2010/supplement10.htm>

<sup>60</sup> *E.g.*, “Annual Update on Fuel Poverty and Health,” University of Ulster Public Health Policy Centre (Dec. 2009); Frank D. A., *et al.*, “Heat or eat: the Low Income Home Energy Assistance Program and Nutritional and Health Risks among Children less than 3 Years of Age,” *Pediatrics*, 118:e1293-302 (November 2006). It is estimated that the number excess winter deaths in some countries exceeds the number of transportation accidents. Bouzarovski – Buzar, S. (Univ. of Birmingham) (2011), “Unpacking the institutional embeddedness of energy poverty: a Bulgarian case study,” at 5, for InCluESEV.

<sup>61</sup> Boardman, B. (Oxford) (2011), “Overview of fuel poverty issues” at 3-4, 6, 14, for International Energy Agency; InCluESEV Hills Submission; Campbell, R. (National Energy Action) (2011), “Fuel Poverty in the United Kingdom: Reconciling social and environmental objectives,” at 1, 2, 6, for InCluESEV.

standard of the median-income energy burden or a multiple of it.<sup>62</sup> In the US, the concept of “energy burden” is used instead of “fuel poverty”; there is no agreed standard but the concept has long been used in advocacy and policymaking.<sup>63</sup>

Because of these differences, some point out the difference between fuel poverty and poverty.<sup>64</sup> Our view, however, is that the important place for focus is poverty.<sup>65</sup> We agree that describing poverty silos, such as energy poverty or food poverty, is useful tactically because cold and hungry children are politically appealing and because addressing such silos appeals to particular economic interests (fuel providers, food producers). In reality, however, from a policy perspective, the only real difference between a poor household in or out of “fuel poverty” is the choice a particular household makes about spending its inadequate funds; whether a household chooses to forego fuel for food or vice-versa is not material because both are necessities and either choice reflects a condition of poverty. In either case, providing fuel (or food) support helps alleviate poverty, not just fuel (or food) poverty.

One implication of this point is that defining the problem as “poverty” and not “fuel poverty” simplifies the task of identification of those in need of low-income home energy assistance.<sup>66</sup> The consequence of our view is that screening should be done only for overall poverty (*i.e.*, for income), not for fuel poverty, so there is in general no need to ponder such issues as what room temperature is adequate for a particular family. Of course, poverty is a relative concept so a societal judgement must still be made as to what constitutes poverty in each society.

3. Approaches to poverty in, for example, the Southern US and Eastern Europe are affected by a relative lack of income available to share in the amelioration of poverty. National or state wealth makes an important difference to the ability to address poverty. Southern US states and Southeastern European nations are thus at a significant disadvantage.<sup>67</sup> This may justify increased cross-border support.<sup>68</sup> Economic development (jobs) may thus be as

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<sup>62</sup> Boardman, B. (Oxford) (2011), “Overview of fuel poverty issues” for International Energy Agency; Dubois, U. (Institut Supérieur de Gestion), Glachant, J. (Florence School of Regulation) (2011), “The three ‘worlds’ of fuel poverty policy,” at 9, for InCluESEV; Sergio, Bouzarovski – Buzar, S. (Univ. of Birmingham) (2011), “Unpacking the institutional embeddedness of energy poverty: a Bulgarian case study,” for InCluESEV.

<sup>63</sup> *E.g.*, Meg Power, “Low-Income Consumers’ Energy Bills and Energy Savings In 2003 and FY 2004,” <http://www.opportunitystudies.org/repository/File/weatherization/low-income-cons-energy-bills-2003-and-2004.pdf>. However, in a handful of US states, low-income households are required to pay only a specified percentage of income for their home energy needs (utility electricity and natural gas). These Percentage-of-Income-Payment-Plans (PIPPs) thus effectively cap the low-income energy burden at the specified level, which may be thought of as a definition of the fuel poverty line in that state. *E.g.*, Oppenheim, Jerrold and Theo MacGregor, “Low Income Consumer Utility Issues: A National Perspective” at 11-14 (Oct. 2000), <http://www.democracyandregulation.com/detail.cfm?artid=22>.

<sup>64</sup> *E.g.*, InCluESEV Hills Submission; Dubois, U. (Institut Supérieur de Gestion), Glachant, J. (Florence School of Regulation) (2011), “The three ‘worlds’ of fuel poverty policy,” at 10-11, for InCluESEV. Also note that in hot climates, for example, if the assumption is that air conditioning is a luxury, there may be only a few cold weeks so energy bills might not be so high as to qualify for “fuel poverty” though the household is nevertheless suffering because it is poor.

<sup>65</sup> However, any definition of poverty or fuel poverty involves averaging and is therefore somewhat arbitrary and may not fit the needs of particular households with extraordinary energy or non-energy expenses such as medical (especially in the US), rent, or disability and other special needs. Further, energy needs vary with factors that averages overlook, such as age, number and ages of children, employment, and size and construction of housing. Rent, of course, is related to energy where rent includes heat or weatherization measures.

<sup>66</sup> See Boardman, B. (Oxford) (2011), “Overview of fuel poverty issues” at 7, for International Energy Agency; S. Herrero (Central European University), (2011), “Alleviating Fuel Poverty In Hungary” at appendix, for InCluESEV; Dubois, U. (Institut Supérieur de Gestion), Glachant, J. (Florence School of Regulation) (2011), “The three ‘worlds’ of fuel poverty policy,” at 9, 14, 16-20, for InCluESEV;

<sup>67</sup> Oppenheim, Jerrold and Theo MacGregor, “Energy Efficiency Equals Economic Development: The Economics of Utility System benefit Funds,” at 56-57, (June 2008), <http://www.democracyandregulation.com/detail.cfm?artid=135&row=0>; Bouzarovski – Buzar, S. (Univ. of Birmingham) (2011), “Unpacking the institutional embeddedness of energy poverty: a Bulgarian case study,” for InCluESEV; S. Herrero (Central European University), (2011), “Alleviating Fuel Poverty In Hungary” at appendix, for InCluESEV.

<sup>68</sup> Various mechanisms exist in Europe for such support, such as through the European Commission and the European Bank for Reconstruction and Development. US LIHEAP and WAP may be seen as minimal examples of cross-border support.



important a goal in energy policy as is combatting climate change and poverty.<sup>69</sup> Note also that there are broad differences in income within nations and states.

4. Approaches to poverty in, for example, many US states and Eastern Europe are also affected by a history of inefficient, high carbon (coal) energy production and use – also centrally directed in the case of Eastern Europe, introducing additional institutional inefficiencies. This inequality in required carbon amelioration may also justify cross-border support.
5. Concerns about Carbon and climate underlie many energy efficiency policies and programs, rarely<sup>70</sup> affordability. Some tools that are effective to encourage or require energy efficiency – higher prices, codes and standards, weatherization requirements – are valuable but little attention is paid to their impact on low-income households. Low-income households have particular needs; programs need to be specifically designed to meet those needs. At the same time, a narrow focus on the internalized economics of energy efficiency tends to overlook critical climate and other societal benefits. The fact that beneficial energy efficiency policies drive low-income households further into poverty provides an excellent rationale for low-income energy assistance (both cash and efficiency) to offset the adverse impact on low-income households of energy policy that benefits the entire society. In our view, a better accounting of the non-energy and non-climate benefits of energy efficiency would lead to an understanding of the anti-poverty values served by energy efficiency, *e.g.*, improved health, increased property value, reduced fire risk, value of natural gas price hedge. An increased focus on low-income energy efficiency is justified from an energy perspective, also, since low-income homes and appliances tend to be the least efficient and therefore offer the greatest savings opportunities.<sup>71</sup> At the same time, an accounting of societal benefits, such as to the environment, is missing in other places. This can result in underinvestment in energy efficiency because significant benefits of the investment are not accounted for. As noted, economic development (*i.e.*, jobs) is also an important benefit of energy efficiency, which may be of particular value to less wealthy nations and states as well as to low-income communities.

Although we did not focus on it for this paper, one other theme runs through consideration of low-income home energy support: debate. Our experience in Massachusetts and other US states, for example, demonstrates that collaboration between utility service providers and representatives of low-income households is a useful means for developing appropriate programs in specific places, and also that government intervention is vital.<sup>72</sup> Collaboration takes different forms in different places – private negotiations, formal councils, consultation – but is an essential element of the democratic development of programs to combat poverty and address low-income home energy needs. We found robust debate wherever we looked; it is much less important which particular institutions there are as that there are democratic institutions to thrash these issues out.

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<sup>69</sup> Jamie Howland, *et al.*, “Energy Efficiency: Engine of Economic Growth - A Macroeconomic Modeling Assessment (Environment Northeast, Oct. 2009).

<sup>70</sup> Important exceptions are noted in the text, above.

<sup>71</sup> *E.g.*, Mass Save, Technical Reference Manual at 119-123 (Oct. 2011); Boardman, B. (Oxford) (2011), “Overview of fuel poverty issues” at 14-15, for International Energy Agency; Campbell, R. (National Energy Action) (2011), “Fuel Poverty in the United Kingdom: Reconciling social and environmental objectives,” at 6, 2, 6, for InCluESEV; S. Herrero (Central European University), (2011), “Alleviating Fuel Poverty In Hungary” for InCluESEV.

<sup>72</sup> See generally, G. Palast, J. Oppenheim, and T. MacGregor, *Democracy And Regulation* (London: Pluto, 2003), <http://www.democracyandregulation.com/detail.cfm?artid=11&row=0>.

## References (excludes interviews)

- Antuofermo, M., (2012), *et al.*, “Population and social conditions” (Eurostat).
- Atkinson, A. B., *et al.*, (2010), eds., “Income and living conditions in Europe” (Eurostat).
- Bartiaux, F., *et al.*, (Université catholique de Louvain) (2011), “Policies affecting energy poverty in Belgium: Paradoxes between social and climate policies,” for Interdisciplinary Cluster on Energy Systems, Equity and Vulnerability.
- Berger, T. (Alpen-Adria Universität) (2011), “Energy Poverty: a case study in Austria,” for Interdisciplinary Cluster on Energy Systems, Equity and Vulnerability.
- A. Bishaw *et al.*, (2010), “Poverty: 2008 and 2009 American Community Survey Briefs” (US Census, no. ACSBR/09-).
- Boardman, B. (Oxford) (2011), “Overview of fuel poverty issues” for International Energy Agency.
- Bolinger *et al.*, (2002), “Quantifying The Value That Wind Power Provides As A Hedge Against Volatile Natural Gas Prices” (Lawrence Berkeley National Laboratory, LBNL-50484).
- Bouzarovski – Buzar, S. (Univ. of Birmingham) (2011), “Unpacking the institutional embeddedness of energy poverty: a Bulgarian case study,” for Interdisciplinary Cluster on Energy Systems, Equity and Vulnerability.
- Campbell, R. (National Energy Action) (2011), “Fuel Poverty in the United Kingdom: Reconciling social and environmental objectives,” for Interdisciplinary Cluster on Energy Systems, Equity and Vulnerability.
- Chedin, G. *et al.*, (2009), “Energy Efficiency Trends, Policies & Measures in France (1990-2007),” Monitoring of Energy Efficiency in EU 27, Norway and Croatia (ODYSSEE-MURE).
- Dubois, U. (Institut Supérieur de Gestion), Glachant, J. (Florence School of Regulation) (2011), “The three ‘worlds’ of fuel poverty policy,” for Interdisciplinary Cluster on Energy Systems, Equity and Vulnerability.
- Elek, L., (2009), “Energy Efficiency Policies and Measures In Hungary,” [http://www.odyssee-indicators.org/publications/PDF/hungary\\_nr.pdf](http://www.odyssee-indicators.org/publications/PDF/hungary_nr.pdf).
- Energy Information Administration, US DOE (database).
- Eurostat (database).
- Frank D. A., *et al.*, (2006), "Heat or eat: the Low Income Home Energy Assistance Program and Nutritional and Health Risks among Children less than 3 Years of Age," *Pediatrics*, 118:e1293-302.
- Harak, C., (2007), Utilities Advocacy For Low-Income Households In Massachusetts (National Consumer Law Center, 2d ed.), <http://www.masslegalservices.org/system/files/utility-handbook-2d-ed.pdf>.
- Heffner, G., Campbell, N. (2011), *Evaluating the co-benefits of low-income energy-efficiency programmes*, International Energy Agency.
- Herrero, S. (Central European University), (2011), “Alleviating Fuel Poverty In Hungary” for Interdisciplinary Cluster on Energy Systems, Equity and Vulnerability.
- Howland, J., *et al.*, (2009), “Energy Efficiency: Engine of Economic Growth - A Macroeconomic Modeling Assessment (Environment Northeast).
- L. Kostadinov, L., (2009), “Energy Efficiency Policies and Measures in Bulgaria,” [http://www.odyssee-indicators.org/publications/PDF/bulgaria\\_nr.pdf](http://www.odyssee-indicators.org/publications/PDF/bulgaria_nr.pdf).
- LIHEAP Clearinghouse (database), <http://liheap.ncat.org/Supplements/2010/supplement10.htm>.
- Massachusetts Supreme Judicial Court (1980), American Hoechst Corporation et al. vs. Department of Public Utilities et al., 379 Mass. 408, 411-412.
- Nevin, *et al.*, (1998), "Evidence of Rational Market Valuations for Home Energy Efficiency," *The Appraisal Journal*, at 403 (Appraisal Institute).
- NMR, (2011), “Massachusetts Special and Cross-Sector Studies Area, Residential and Low-Income Non-Energy Impacts (NEI) Evaluation” (Tetra Tech).
- Noss, A., (2011), “Household Income for States: 2009 and 2010 - American Community Survey Briefs” at 5 (US Census no. ACSBR/10-02).
- O’Brian, T. (European Commission) (2011), “EU Energy Policy – vulnerable consumers and energy efficiency measures,” for International Energy Agency.
- O’Connor, S. (Ireland Department of Communications, Energy and Natural Resources) (2011), “Policy Approaches in Ireland,” for International Energy Agency.
- Oppenheim, J. and Theo MacGregor (2000), “Low Income Consumer Utility Issues: A National Perspective” (Oak Ridge National Laboratory), <http://www.democracyandregulation.com/detail.cfm?artid=22>.
- Oppenheim, J. and Theo MacGregor (2008), “Energy Efficiency Equals Economic Development: The Economics of Utility System benefit Funds,” at 56-57, <http://www.democracyandregulation.com/detail.cfm?artid=135&row=0>.
- Oppenheim, J., and T. MacGregor (2011), “The Massachusetts Model for Low-Income Energy Service Delivery,” for Interdisciplinary Cluster on Energy Systems, Equity and Vulnerability.
- Palast, G., J. Oppenheim, and T. MacGregor, Democracy And Regulation (London: Pluto, 2003), <http://www.democracyandregulation.com/detail.cfm?artid=11&row=0>.
- Ranninger, H. M., (1999), “A Key Role for Service Limiters in the Social Policy for Low-Income Customers at EDF,” (Domestic Use of Electrical Energy Conference).

Ryan, C. (Community-Based Organisation Forum, Ireland) (2011), “The Whole Community Approach: Report from the Field, for International Energy Agency.

Short, K., (2011), “The Research Supplemental Poverty Measure: 2010” (US Census Bureau report P60-241), <http://www.census.gov/prod/2011pubs/p60-241.pdf>.

Torrens, J. (Dept. of Energy & Climate Change) (2011), “Policy Approaches in the UK,” for International Energy Agency.

Wagner, A., *et al.*, (2009), “Energy Efficiency Policies and Measures in the UK 2009,” [http://www.odyssee-indicators.org/publications/PDF/UK\\_nr.pdf](http://www.odyssee-indicators.org/publications/PDF/UK_nr.pdf).

Walker, G. *et al.*, (2000), “Submission to Hills Fuel Poverty Review: Response to Interim Report,” (Interdisciplinary Cluster on Energy Systems, Equity and Vulnerability).

Wasserman, N. *et al.*, (2012), Achieving Energy Efficiency – A Global Best Practices Guide on Government Policies (Sleeping Lion Consulting and Regulatory Assistance Project).